LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human NeuroD1-11R Protein
Catalog Number: hTF-0301
Manufacturer: LD Biopharma, Inc.

Introduction

Human NeuroD1 (Neurogenic differentiation factor 1) encodes a member of the NeuroD family of basic helix-loop-helix (bHLH) transcription factors. The protein forms heterodimers with other bHLH proteins and activates transcription of genes that contain a specific DNA sequence known as the E-box. It regulates expression of the insulin gene, and mutations in this gene result in type II diabetes mellitus. Recent data also demonstrated that NeuroD1 play a important role for Trans-differentiation of human fibroblast cell to neuronal cells in vitro. Using mouse in vivo model, over-expression of NeuroD1 gene can convert reactive glial cell into functional neuronal cell for repairing brain injury.

Full-length human NeuroD1 cDNA (355 aa) was constructed with codon optimization gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal & 11 arginine Tag (11R Tag). This protein was expressed in E. coli as inclusion bodies, refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol:	NeuroD1 (Beta2, BHF-1, bHFHa3, MODY6)
Accession Number:	NP_002491
Species:	Human
Size:	40 µg / Vial
Composition:	0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Ziyuan Guo.,et al. *In vivo direct reprogramming of reactive glial cells into functional neurons after brain injury and in an Alzheimer's disease model.* Cell Stem Cell. February 6; 14(2): 188-202. (2014)

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Shimoda,M.,et al. *Neurogenic differentiation 1 directs differentiation of cytokeratin 19-positive human pancreatic nonendocrine cells into insulin-producing cells* Transplant. Proc. 42 (6), 2071-2074 (2010)

Zhiping P.Pang, et al. *Induction of human neuronal cells by defined transcription factors.* Nature May 26. doi: 10.1038/nature10202 (2011)

Hongyan Zhou, et al. *Generation of induced pluripotent stem cells using recombinant protein*. Cell Stem Cell. Vol 4. Issue 5: 381-384 (2009)

Applications

1. May be used for in vitro NeuroD1 mediated gene transcription regulation study for neuronal cell differentiation by intracellular delivery of this protein
2. May be used for mapping NeuroD1 protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As Immunogen for specific antibody development.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGEFTKSYSESGLMGEPQPQGPPSWTDECLSSQDEEHEA
DKKEDDLEAMNAEEDSLRNGGEEEDEDEDLEEEEEEEEEDDDQKPKRRGPKKKKMTKARLERFK
LRRMKANARERNRMHGLNAALDNLRKVVPCYSKTQKLSKIETLRLAKNYIWALSEILRSGKSPD
LVSFVQTLCKGLSQPTTNLVAGCLQLNPRTFLPEQNQDMPPHLPTASASFPVHPYSYQSPGLPS
PPYGTMDSSHVFHVKPPPHAYSAALEPFFESPLTDCTSPSFDGPLSPPLSINGNFSFKHEPSAE
FEKNYAFTMHYPAATLAGAQSHGSIFSGTAAPRCEIPIDNIMSFDSHSHHERVMSAQLNAIFHD
LEESGGGGSPGRRRRRRRRRR